MONTHLY WEATHER REVIEW.

Prof. CLEVELAND ABBE, Editor.

VOL. XXII. ANNUAL SUMMARY. No. 13.

INTRODUCTION.

This annual summary for 1894 is based upon data received from cooperating weather services, and from about 1,600 stations occupied by regular and voluntary observers of the Weather Bureau. The statistical tables have been prepared by the Division of Records and Meteorological Data, A. J. Henry, Acting Chief; the text and editorial work by Prof. Cleveland Abbe.

The title page and contents of the REVIEW for 1894 (Vol. XXII) are also published herewith.

GENERAL CLIMATIC CONDITIONS.

ATMOSPHERIC PRESSURE.

The mean pressure for 1894, as shown by the mercurial barometer, reduced to sea level but not to standard gravity, is shown on Chart I. The correction for the variation of gravity with latitude can easily be made by using the numerical values given for each degree of latitude on the right-hand side of the chart. The method of reduction to sea level adopted in the preparation of this chart is that which is used by the Weather Bureau in the preparation of the daily and monthly charts, and is known as Professor Hazen's method. As this differs from the method recommended by the International Meteorological Conference, the Editor has requested Professor Hazen to prepare a short explanation, which will be found on a subsequent page, and which gives the heights and reductions actually used at each station of the Weather Bureau during this year. By means of this table it becomes possible to approximately re-reduce, according to the international tables, if so desired. Approximate methods of reduction adapted to daily telegraphic reports are not necessarily the most appropriate for the reduction of monthly and annual mean pressures.

The isobars on Chart I show that the mean annual pressure has been highest during 1894 over the south Atlantic and east Gulf States, the maximum being 30.13 in Georgia; the small area of lowest pressure, 29.90, appears, as usual, at the head of the Gulf of California, and, as has been previously explained, is probably a branch from the area of low pressure over the equatorial Pacific. A small region of high pressure extends eastward over Oregon into Utah. The general arctic area of low pressure, 29.95, or less, extends along our northern boundary from British Columbia to Newfoundland.

MOVEMENTS OF CENTERS OF AREAS OF HIGH AND LOW PRESSURES DURING 1894.

The location of an area of high or low pressure is, to a limited extent, affected by the method adopted in the reduction of the barometer to sea level. The following summary, therefore, holds good, especially in connection with the method adopted by the Weather Bureau for the past six or eight years. The average velocities of movements of the centers of the areas are given by paths and by days in the individual tables of the successive MONTHLY WEATHER REVIEWS, and the monthly means are here collected together.

Month.	High areas.				Low areas.			
	No. of paths.	Hourly velocity.	No. of days.	Hourly velocity.	No. of paths.	Hourly velocity.	No. of days.	Hourly velocity.
		Miles.		*Miles.*		*Miles.*		*Miles.*
January	17	24.6	61.5	25.7	16	33.0	42.0	31.2
February	9	25.2	36.0	16.2	15	35.3	40.5	31.4
March	15	21.1	39.0	20.0	16	31.0	49.0	30.4
April	12	19.0	41.0	18.3	14	20.3	45.0	18.8
May	8	28.6	19.5	27.4	10	20.0	29.5	18.4
June	6	21.7	20.5	18.7	17	19.0	38.0	19.0
July	5	15.7	31.0	15.7	11	17.0	38.5	17.3
August	9	13.8	37.0	14.4	16	19.6	57.5	19.0
September	12	21.2	54.5	21.1	11	20.0	53.0	17.9
October	12	27.2	43.0	26.0	15	19.0	76.0	18.8
November	17	29.9	54.0	31.8	16	24.9	49.5	30.5
December	15	26.9	53.5	24.2	17	28.6	45.5	29.5
Annual total.	137	274.9	490.5	259.5	174	287.7	564.0	282.2
Average	11.4	22.9	40.9	21.3	14.5	24.0	47.0	23.5

In general, the rapid movement of high and low areas during the winter months is well shown by this table.

TEMPERATURE.

The mean annual temperature is shown by the isotherms on Chart I. These temperatures relate to the surface of the ground. The individual figures are given in Table I of data for Weather Bureau stations. The lowest annual averages within the United States were: Williston, 40.4; St. Vincent, 37.7; Moorhead, 30.8; Duluth, 41.5; Burlington, 42.6; Eastport, 41.6. The highest averages were: Yuma, 71.4; Corpus Christi, 70.7; Key West, 76.7; Jupiter, 73.8.

The mean annual temperature was above the normal in New England, the middle and south Atlantic States, and generally throughout the interior of the country; it was slightly below the normal in Florida and the Gulf States, the plateau and Pacific coast regions.

The maximum temperatures are shown both by the upper figures and the full lines on Chart II; the minimum temperatures of the year are shown by the lower figures and the dotted lines on the same chart. The absolute range of temperature during the year is easily obtained by comparing the full and dotted lines on this chart. In general, maximum tempera-